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Mahany

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(54) **LOCAL AREA NETWORK HAVING MULTIPLE CHANNEL WIRELESS ACCESS**

(75) Inventor: **Ronald L. Mahany**, Cedar Rapids, IA (US)

(73) Assignee: **Broadcom Corporation**, Irvine, CA (US)

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This patent is subject to a terminal disclaimer.

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H04W 4/00 (2009.01)

(52) **U.S. Cl.** **370/338**; 370/352; 370/310.2; 370/313; 370/401; 455/41.2; 455/432.1

(58) **Field of Classification Search** 370/310.2, 370/313, 352, 328, 338; 455/41.2
See application file for complete search history.

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Primary Examiner—Sharad Rampuria
(74) *Attorney, Agent, or Firm*—McAndrews, Held & Malloy, Ltd.

(57) **ABSTRACT**

A communication network having at least one access point supports wireless communication among a plurality of wireless roaming devices via a first and a second wireless channel. The access point comprises a first and a second transceiver. The first and second transceivers operate on the first and second wireless channels, respectively. Each of the plurality of wireless roaming devices are capable of communicating on the first and second wireless channel. In one embodiment, the first wireless channel is used to exchange data, while the second channel is used to manage such exchanges as well as access to the first channel. In an alternate embodiment, both channels are used to support communication flow, however the first channel supports a protocol that is more deterministic than that of the second channel. Allocation of ones of the plurality of wireless roaming devices from one channel to the next may occur per direction from the access point. It may also result from decisions made by each of the wireless roaming devices made independent of the access point. For example, a decision may be made based on the data type being transferred or based on the current channel load. Such factors may also be used by the access point for allocation determinations. In addition, allocation may be based on the type of roaming device involved, such as allocating peripherals to a slower channel.

24 Claims, 17 Drawing Sheets